

Claims

1. A process for producing ethanol by fermentation, said process comprising a simultaneous saccharification and fermentation (SSF) step conducted at a temperature of above
5 34°C in the presence of a glucoamylase and a thermo-tolerant yeast.
2. The process of claim 1, wherein the temperature is at least 34.5°C, or preferably at least 35°C.
- 10 3. The process of claim 1, wherein the glucoamylase is derived from *Talaromyces emersonii*, preferably from *Talaromyces emersonii* CBS 793.97.
4. The process of claim 1, wherein the glucoamylase has an amino acid sequence comprising one or more of the partial sequences shown in SEQ ID NOS: 1-6 of WO 99/28448.
- 15 5. The process of claim 1, wherein the glucoamylase has an amino acid sequence with an identity of at least 60% with SEQ ID NO: 7 of WO 99/28448, or is a variant of the glucoamylase shown in SEQ ID NO: 7 of WO 99/28448.
- 20 6. The process of claim 1, further comprising recovery of the ethanol.
7. The process of claim 1, further comprising a step of distillation to obtain the ethanol, wherein the SSF step and the distillation is carried out simultaneously or sequentially.
- 25 8. The process of claim 1, wherein the thermo-tolerant yeast is a yeast which when fermenting at 35°C maintains at least 90% of the ethanol yields and 90% of the ethanol productivity during the first 70 hours of fermentation, as compared to when fermenting at 32°C under otherwise similar conditions.
- 30 9. The process of claim 1, wherein the thermo-tolerant yeast is a yeast which when fermenting at 35°C is capable of producing at least 15 % V/V alcohol from a corn mash comprising 34.5% (w/v) solids.

10. The process of claim 1, wherein the thermo-tolerant yeast is Red Star®/Lesaffre Ethanol Red (commercially available from Red Star®/Lesaffre, USA, Product no: 42138).

11. The process of claim 1, wherein the SSF step is carried out in the presence of a protease and/or a phytase.

12. The process of claim 11, wherein the protease is a microbial protease, preferably a fungal protease, more preferably an acid fungal protease, even more preferably an acid fungal protease derived from a strain of *Aspergillus*, preferably *A. niger*.

13. The process of claim 11, wherein the protease is a neutral or alkaline protease, such as a protease derived from a strain of *Bacillus*.

14. The process of claim 11, wherein the phytase is microbial, preferably the phytase is derived from a strain of *Peniophra lycii* or *Aspergillus oryzae*.

15. An ethanol produced by a process as defined in claim 1.